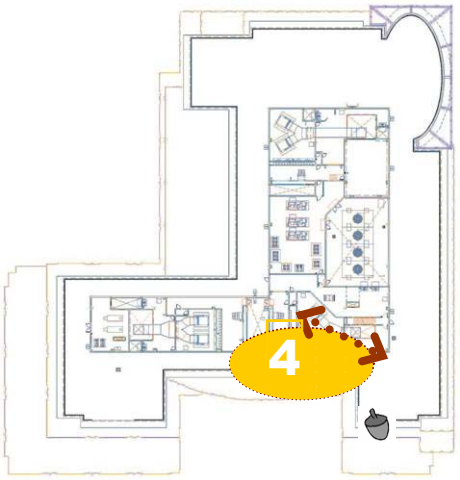

Penthouse

Location: The Penthouse (7th Floor) is only accessible from the central staircase.

Starting Point: From the top stair landing - enter through the hollow-metal door to your *left* as you reach the top of the staircase.

Ending Point: Exit through the same door then enter the door immediately to the left (east) to access the roof – or – down the central staircase to the 3rd Floor open office space.

The enclosed Penthouse is actually part of the return air system for the floors supplied by the Underfloor Air Distribution (UFAD) system.

Looking down the supply-return shaft, louvered vents can be seen on the sides. The louvers are where the return air is drawn into the shaft from above the ceilings on each floor and either exhausted out of the building or re-circulated and re-conditioned. The 'pink' color on the fireproofing was added to a low-VOC sealer used at locations where high-velocity air movement exists. The exhaust fans are variable speed, so they only work as hard as necessary.

The return air that is not exhausted is drawn to a set of louvers at the end of the hall. Carbon Dioxide sensors (tubes) constantly monitor the condition of the air adding more fresh outside air as required.

The return air passes through the louvers into a chamber where it is mixed with fresh air before being re-filtered, cooled as necessary, and returned to the floors below as supply air.

The huge filter bank contains 70 micro-pleated filters that are rated over 90% efficient – the highest efficiency available at the time of construction. These filters are monitored by the Building Management Team and cleaned when necessary.

After filtration, the air passes across coils filled with chilled water to bring the air temperature down to 63ºF. Conventional overhead HVAC systems require conditioned air to be delivered at 56º-58ºF. The difference in air temperature is one of the many benefits of an UFAD system and contributes to saving the state nearly $150,000 per year in energy costs alone.

High-efficiency centrifugal chillers pump the chilled water to the coils. The chiller design provided for an N+1 redundancy, meaning at any time one of the units can be off-line for maintenance or repair without affecting the systems ability to cool the building. It also means the units do not have to work as hard thus extending their useful life.